

# GEOMETRY

## Chapter 8 Review Packet

Name ANSWER KEY Period \_\_\_\_\_

### TARGET A & B

Find the sum of the measure of the interior angles, sum of the exterior angles, and one of each for the following regular polygons.

1.) **Pentagon** # sides = 5

Sum of the interior angles =  $540^\circ$

Measure of one interior angle =  $108^\circ$

Sum of the exterior angles =  $360^\circ$

Measure of one exterior angle =  $72^\circ$

2.) **18-gon** # sides = 18

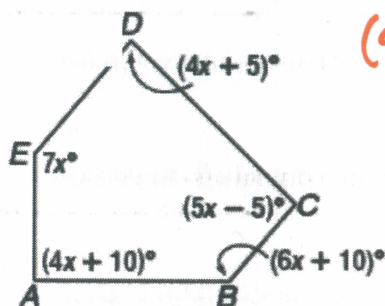
Sum of the interior angles =  $2880^\circ$

Measure of one interior angle =  $160^\circ$

Sum of the exterior angles =  $360^\circ$

Measure of one exterior angle =  $20^\circ$

3.) Solve for the variable and the following angle measures.



$$(4x+5) + (5x-5) + (6x+10) + (4x+10) + 7x = 540$$

$$26x + 20 = 540$$

$$26x = 520$$

$$x = 20$$

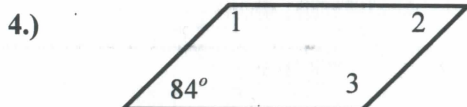
$$x = \underline{20^\circ}$$

$$m\angle C = \underline{95^\circ}$$

$$m\angle E = \underline{140^\circ}$$

### TARGET C & D

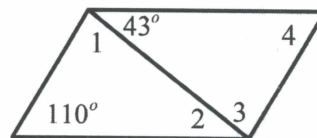
For 4 & 5, solve for the missing angles in the parallelogram.



$\angle 1 = \underline{96^\circ}$   $\angle 2 = \underline{84^\circ}$

$\angle 3 = \underline{96^\circ}$

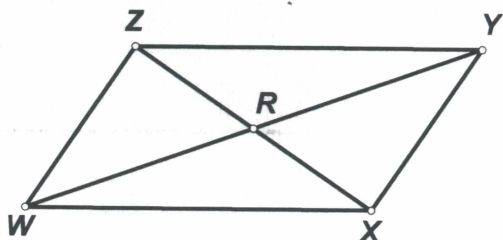
5.)



$\angle 1 = \underline{27^\circ}$   $\angle 2 = \underline{43^\circ}$

$\angle 3 = \underline{27^\circ}$   $\angle 4 = \underline{110^\circ}$

6.) Use the parallelogram to complete the following statements.



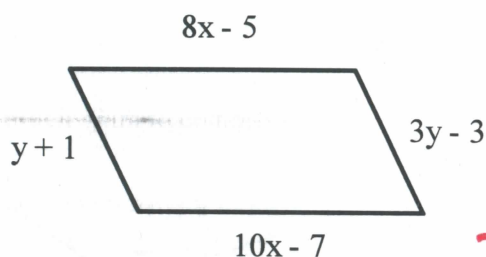
$$\overline{WR} \cong \underline{\overline{RY}}$$

$$\angle WZX \cong \underline{\angle YXZ}$$

$$\overline{XY} \cong \underline{\overline{WZ}}$$

$$\angle WZY \cong \underline{\angle YXW}$$

7.) Solve for the values of  $x$  and  $y$  that would make this a parallelogram.



$$\begin{aligned} 8x - 5 &= 10x - 7 \\ -5 &= 2x - 7 \\ 2 &= 2x \\ 1 &= x \end{aligned}$$

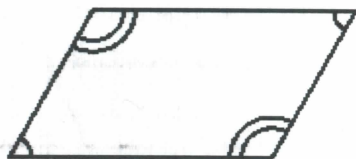
$$x = \underline{1}$$

$$\begin{aligned} 3y - 3 &= y + 1 \\ 2y - 3 &= 1 \\ 2y &= 4 \\ y &= 2 \end{aligned}$$

$$y = \underline{2}$$

8.) Determine if the following quadrilaterals are parallelograms. Give a reason why or why not.

a.



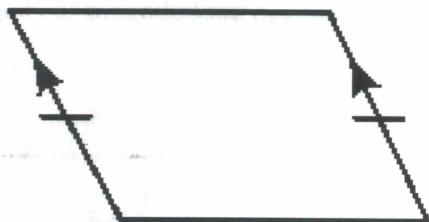
YES, OPPOSITE ANGLES ARE  $\cong$

b.



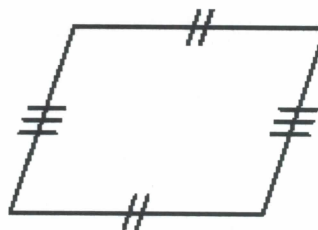
NO, NEED INFO ON OTHER TWO ANGLES

c.



YES, ONE PAIR OF SIDES THAT ARE BOTH PARALLEL AND CONGRUENT

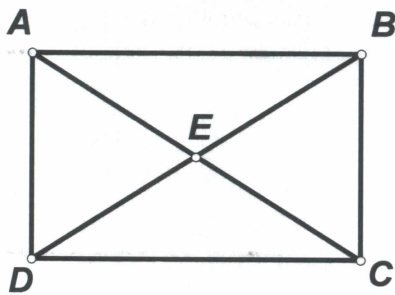
d.



YES, OPPOSITE SIDES ARE CONGRUENT

## TARGET E

- 9.) Find  $x$  and the length of  $\overline{AC}$  in the rectangle.



$$AC = 6x - 7$$

$$BD = 3x - 1$$

$$6x - 7 = 3x - 1$$

$$3x - 7 = -1$$

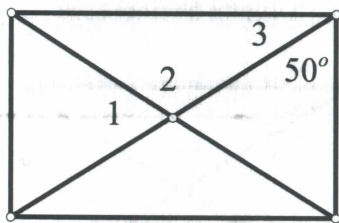
$$3x = 6$$

$$x = 2$$

$$x = \underline{2}$$

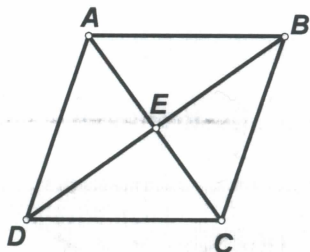
$$AC = \underline{5}$$

- 10.) Find the measure of  $\angle 1$ ,  $\angle 2$  and  $\angle 3$  in the rectangle.



$$\angle 1 = \underline{80^\circ} \quad \angle 2 = \underline{100^\circ} \quad \angle 3 = \underline{40^\circ}$$

- 11.) Use the rhombus to complete the following statements.



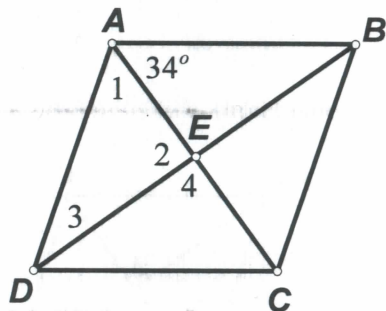
$$\overline{DE} \cong \underline{\overline{EB}}$$

$$\angle ADB \cong \underline{\begin{matrix} \angle CDB \\ \angle ABD \\ \angle CBD \end{matrix}}$$

$$m\angle AED = \underline{90^\circ}$$

True or false:  $\overline{AC} \cong \overline{BD}$

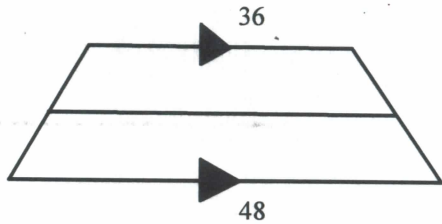
- 12.) Find the measure of the numbered angles in the rhombus



$$\angle 1 = \underline{34^\circ} \quad \angle 2 = \underline{90^\circ}$$

$$\angle 3 = \underline{56^\circ} \quad \angle 4 = \underline{90^\circ}$$

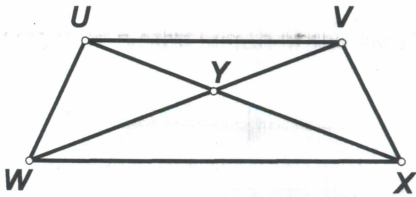
- 13.) Find the length of the median in the trapezoid



$$\frac{36 + 48}{2} = 42$$

median 42

- 14.) Use the isosceles trapezoid to complete the following statements.



$$\overline{UV} \parallel \underline{\overline{WX}}$$

$$\overline{VX} \cong \underline{\overline{UW}}$$

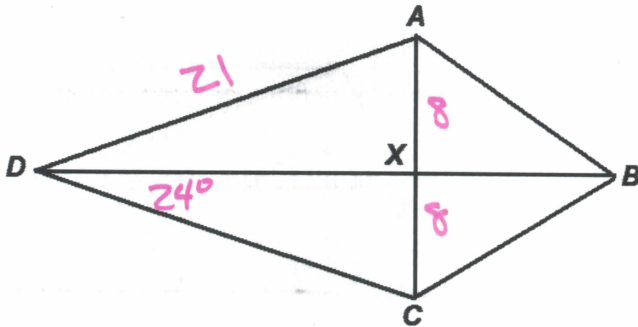
$$\angle WXV \cong \underline{\angle XWU}$$

True or false:  $\overline{UX} \cong \overline{VW}$

$$\angle WUV \cong \underline{\angle XVU}$$

True or false:  $\overline{UY} \cong \overline{YX}$

- 15.) Use kite ABCD to find the following measurements if  $m\angle CDX = 24^\circ$ ,  $\overline{AD} = 21$  and  $\overline{AC} = 16$



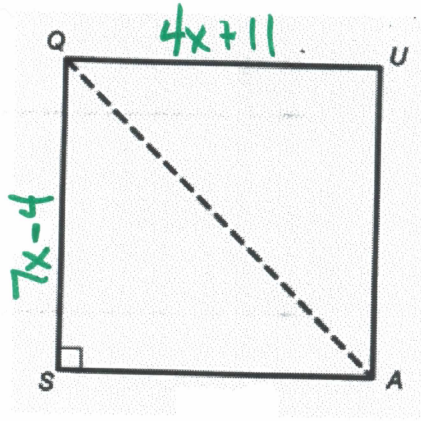
$$m\angle ADX = \underline{24^\circ}$$

$$m\angle AXD = \underline{90^\circ}$$

$$\overline{DC} = \underline{21}$$

$$\overline{AX} = \underline{8}$$

- 16.) SQUA is a square. If  $SQ = 7x - 4$  and  $QU = 4x + 11$ , find the value of  $x$  & the sides and angles.



$$\begin{aligned} 7x - 4 &= 4x + 11 \\ 3x - 4 &= 11 \\ 3x &= 15 \\ x &= 5 \end{aligned}$$

$$x = 5$$

$$SQ = 31$$

$$UA = 31$$

$$m\angle SQA = 45^\circ$$

$$m\angle UAS = 90^\circ$$

$$QA = 31\sqrt{2} \approx 43.84$$

### TARGET F

- 17.) Graph the points: W (-6, -5), X (-1, -4), Y (0, -1), Z (-5, -2).

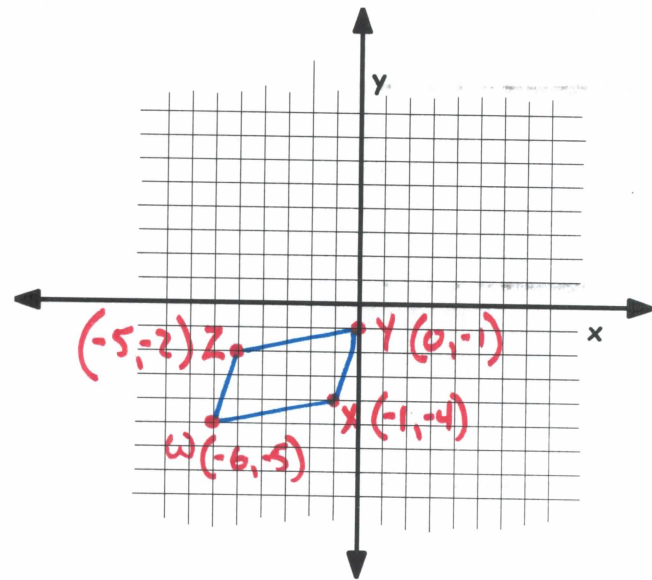
- a) Find the **slope** for the following sides.

$$WX = \frac{1}{5} \quad \frac{-4 - (-5)}{-1 - (-6)} = \frac{1}{5}$$

$$XY = 3 \quad \frac{-1 - (-4)}{0 - (-1)} = \frac{3}{1} = 3$$

$$YZ = \frac{1}{5} \quad \frac{-2 - (-1)}{-5 - (-4)} = \frac{1}{5}$$

$$WZ = 3 \quad \frac{-2 - (-5)}{-6 - (-5)} = \frac{3}{-1} = -3$$



What does the slope tell you about the quadrilateral?

THE OPPOSITE SIDES ARE PARALLEL SO IT IS AT LEAST A PARALLELOGRAM, ALSO, THE SIDES DO NOT FORM A RIGHT ANGLE SO IT CANNOT BE A RECTANGLE



W (-6, -5), X (-1, -4), Y (0, -1), Z (-5, -2).

b) Find the length of each side using the distance formula.

$$WX = \underline{5.1} \quad \sqrt{(-1 - -6)^2 + (-4 - -5)^2} = \sqrt{5^2 + 1^2} = \sqrt{25 + 1} = \sqrt{26} \approx 5.1$$

$$XY = \underline{3.2} \quad = \sqrt{(0 - -1)^2 + (-1 - -4)^2} = \sqrt{1^2 + 3^2} = \sqrt{9 + 1} = \sqrt{10} \approx 3.2$$

$$YZ = \underline{5.1} \quad = \sqrt{(0 - -5)^2 + (-1 - -2)^2} = \sqrt{5^2 + 1^2} = \sqrt{25 + 1} = \sqrt{26} \approx 5.1$$

$$WZ = \underline{3.2} \quad = \sqrt{(-5 - -6)^2 + (-2 - -5)^2} = \sqrt{1^2 + 3^2} = \sqrt{1 + 9} = \sqrt{10} \approx 3.2$$

What does the distance/length tell you about the quadrilateral? ALL 4 SIDES ARE NOT CONGRUENT SO IT IS NOT A RHOMBUS OR SQUARE

c) Find the midpoint of the diagonals

$$\text{Midpoint of WY} = \underline{(-3, -3)} \quad \left( \frac{-6 + 0}{2}, \frac{-5 + -1}{2} \right) = (-3, -3)$$

$$\text{Midpoint of XZ} = \underline{(-3, -3)} \quad \left( \frac{-1 + -5}{2}, \frac{-4 + -2}{2} \right) = (-3, -3)$$

d) What type of special quadrilateral is WXYZ? Why?

A PARALLELOGRAM. THE OPPOSITE PAIRS OF SIDES ARE PARALLEL SO IT IS A PARALLELOGRAM. ALL 4 SIDES ARE NOT CONGRUENT SO IT IS NOT A RHOMBUS OR SQUARE. THE SIDES DO NOT FORM RIGHT ANGLES SO IT IS NOT A RECTANGLE EITHER.